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ABSTRACT

The programs and projects of the Charles F. Kettering Foundation are outlined, and its attitudes toward evaluation are discussed--with particular emphasis on the evaluation of an individually guided education project, developed by the Institute for Development of Educational Activities to promote instructional change. The Kettering Foundation, a nonprofit, philanthropic foundation, often in cooperation with other agencies, develops programs to solve long-range social and scientific problems--including education, urban affairs, and world food supply. Program evaluations address the validity of the program's goals, assess its implementation, and suggest improvements. The evaluations differ according to each situation, and use recognized experts or consulting personnel. An evaluation may be stopped if it is felt that it will not yield useful information. Six steps are described to evaluate the individually guided education (IGE) program: (1) specify outcomes; (2) refine change strategies; (3) analyze training techniques that foster change; (4) develop teacher training materials; (5) identify cooperating agencies; and (6) train agency workers. The foundation encourages the continuous evaluation of its projects, and learning from mistakes. (Program appropriations in 1977 and 1978; names of trustees, officers, and advisory committee members; and objectives of the IGE program are appended). (GDC)

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# THE ROLE OF EVALUATION IN A MISSION ORIENTED FOUNDATION

AN INVITED PAPER PRESENTED AT

AERA ANNUAL MEETING

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APRIL 1979

by

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CHARLES F. KETTERING FOUNDATION

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# THE ROLE OF EVALUATION IN A MISSION ORIENTED FOUNDATION

Although operations at the Charles F. Kettering Foundation may or may not be representative of other nonprofit, philanthropic, private foundations, the intent of this paper is to explain its programs and evaluation activities. Hopefully, this brief survey will provide clarifying information to those who may want to establish relationships with the private, philanthropic sector. This paper outlines the programs and selected projects of the Kettering Foundation, describes its present uses of and attitudes toward evaluation, and speculates on the trend of evaluation in the future.

## CHARACTERISTICS OF THE KETTERING FOUNDATION

The Foundation's goal is to make significant contributions toward the resolution of critical societal issues through new and collaborative processes.[1]

The Foundation feels that its most effective role is as a facilitator of a collaborative problem-solving process, sometimes contributing substantive knowledge, and other times process skills, to the collaboration. On still other occasions, it brokers relations among institutions.

In contrast to foundations that are primarily grant giving institutions managed by executive directors and staffs who approve and administer grants, the Kettering Foundation maintains operating program staffs who develop and implement in cooperation with others systematic approaches

to solving social and scientific problems over a relatively long period of time. Essentially an operating foundation, it maintains professional and support staffs in four program areas under two divisions: Social Sciences and Science and Technology. The Social Sciences Division includes programs in Education, Urban Affairs, and International Affairs; the Science and Technology Division pursues a mission to help alleviate the world food shortage through research in nitrogen fixation and photosynthesis recognizing that crop production can be increased through application of research findings in these fundamental processes.

The Education and Urban Affairs programs comprise the Foundation's affiliate the Institute for Development of Educational Activities, Inc. (/I/D/E/A/). This arm of the Foundation was established in 1965 to allow additional flexibility in conducting development and research in these two areas.

The number of staff members varies among program areas, and, of course the size of the program staff determines, to a degree, the type of evaluation that accompanies a project. Whereas four professionals engage in work in the Urban Affairs Program and three in International Affairs, a professional staff of twenty-six works in Education (five in development and twenty-one in research) and approximately eighty-five scientists and support staff conduct research in the Science Division. Generally, the smaller staffs rely on evaluators from outside the foundation, and projects with

larger staffs more often use internal staff evaluation. A list of grants and projects of the Kettering Foundation and its affiliate for the fiscal year ending August 31, 1978 is appended to this report (Appendix 1).

Opportunities and expectancies different from those encountered by projects in other kinds of institutions affect the projects and staffs of an operating foundation, and the Kettering Foundation's operations and staff attitudes reflect these differences. In particular, individual and group characteristics of the program staffs significantly influence the Kettering Foundation's approaches to evaluation. For instance, staff members are very "action oriented." They prefer to focus their efforts on "making a difference" by discovering solutions to old problems and exploring and clearly defining new ones.

Robert Chollar, president of the Kettering Foundation, identified several major, long term problems in the Charles F. Kettering Annual Report, 1978.[2]

> Today...we must concern ourselves with the needs to feed, house, educate and employ growing populations; to reverse the course of urban deterioration; to redirect toward productive ends resources spent in arms races; to balance energy supply and demand; and to protect vital ecological systems.

Evaluation as a means of insuring valid and effective programs is essential and vigorously supported at the Kettering Foundation. But as more long-range and complex goals have

been pursued, the processes of evaluation have evolved to accommodate changing objectives and needs as perceived by program staffs and foundation officers. Operationally, evaluation at the Kettering Foundation is the systematic collection of information used to improve the quality of decisions. Evaluation addresses such questions as:

1. Is the project valid--does it do what it was designed to do--are there unintended effects to consider?
2. How worthy are the goals?
3. How effective are the strategies of implementation?
4. What are the positive and negative effects of implementation or participation?
5. How can the project be improved?

To decide how best to approach evaluation, the Kettering Foundation considers what information is needed, the best way to get it, and how it will be used. Different emphasis on these considerations has caused approaches to evaluation to vary greatly from project to project.

## GENERAL ATTITUDES TOWARD EVALUATION

Before discussing different approaches to evaluation, it may be worthwhile to mention four generalizations that seem to apply to the Kettering Foundation but may or may not describe other foundations. First, its project staffs increasingly rely on and value internal, day-to-day, peer-review evaluation. These approaches to evaluation are supplemented with periodic surveys by others who are either

nationally recognized as experts in one of the program areas or have special knowledge, experience, and expertise in evaluation. This allows program staffs to identify problems and redirect projects continuously so that information and recommendations can be used most effectively.

A second generalization is that the Foundation's evaluation efforts and resources focus on approaches that have potentially high payoffs--results likely to yield information that will alter the project's research or activities. New information should affect decisions; if the results of an evaluation study aren't likely to affect decisions or redirect a project, then the evaluation plan is rejected.

Thirdly, simple, straightforward evaluations are preferred to those that are sophisticated, complicated, and expensive. Based on the Foundation staff's experiences an attitude prevails that the payoffs from typical, statistically laden, quasi-experimental methods of evaluation are not usually worth the cost. Records show that decisions within the Foundation reflect this attitude. A recent internal analysis of expenditures conducted at the Kettering Foundation shows that in major projects about five percent of the budget is earmarked for evaluation. This may be misleading, however, since separating evaluation activities from other components of the projects is difficult.

The fourth generalization is that, for broad, interdisciplinary issues such as mission direction and goals, evaluation involves people with broad interdisciplinary backgrounds and

perspectives. Conversely, those persons perceived to be the most experienced and knowledgeable in a specialized field evaluate the more specialized projects. The merit of Kettering's mission on improving elementary and secondary education, for example, is periodically examined by the Foundation's board of trustees, who represent a broad range of disciplines (Appendix 2). On the other hand, strategies for individualizing instruction are evaluated by professional educators who have knowledge, experience, and technical skills in these specific techniques.

EXTERNAL EVALUATION

A few examples of how the Kettering Foundation uses outside evaluators and one example of how the operating staff evaluates a project on a day-to-day basis will illustrate the diversity of these processes. In fact, often more than one method is used to evaluate a project. An example of a formal method of evaluation is the annual critique of the Charles F. Kettering Research Laboratory operations conducted by a committee of outside science advisors. This committee, comprised of six eminent scientists (Appendix 3), spends three days at the laboratory each year, consulting each senior scientist to discuss, and in some instances, participate in ongoing experiments. Throughout the year, Kettering scientists are also in contact with the committee members on problems of mutual interest. The committee makes recommendations concerning specific laboratory investigations and general

directions of the laboratory program. Laboratory administrators and foundation officers then use these recommendations to make decisions affecting the allocation of human and financial resources in the Science Division as well as in the laboratory.

Programs in the Foundation's Social Sciences Division undergo similar, although usually less structured, evaluations at intervals throughout the year. Most recently an Education Advisory Panel made up of Harold Hodgkinson, executive director, Professional Institute of the American Management Association; James Jacobs, superintendent of Cincinnati Public Schools; and Ralph Tyler, director of The Center for the Study of Democratic Institutions in Chicago, reviewed the missions and programs in Education. They made suggestions and recommendations and identified other areas to which the Education staff might devote attention.

The advice of outside experts is gathered through a number of approaches. The Urban Affairs staff, for instance, has contracted outside evaluators to monitor their workshops in negotiated investment strategies with the Federal Regional Council (FRC) in Chicago. This series of workshops was designed to assist the FRC in developing a set of urban policy goals and objectives which cut across departmental lines of the ten agencies represented on that body. By including outside evaluators as ad hoc members of the project team, the staff was able to use the knowledge of a variety of experts during the development of the project--at a time when their contributions had optimum influence on project

strategies. Involvement of the outside evaluator also identified deficiencies in the workshop process which were remedied through modifications in subsequent workshops.

In many urban projects user advisory boards are organized to ensure that findings of each project are relevant to their information needs. For example, in the Rand Study of Inadvertent Federal Policy Impacts, the Urban Affairs staff asked the National League of Cities to periodically convene a group of federal, state and local officials to critique the products resulting from the project and to guide the research toward policy-relevant statements. In this way the methodological and research skills of Rand are meshed with the experiences of the practioner.

Experts also evaluate the Foundation's programs through evaluation/dissemination conferences. These conferences allow many experts to evaluate the final product of a project, often a paper, immediately after presentation. The International Symposia on Nitrogen Fixation, organized by the Kettering Laboratory and other research organizations, are examples of evaluation/dissemination conferences. At these meetings scientists from various research groups, including the Kettering Laboratory, present papers to a large international group of scientists who are engaged in similar research. Feedback is almost immediate and usually represents the most erudite opinions in the relevant fields.

The Kettering Foundation frequently issues grants or contracts to outside consultants or institutions to evaluate

a specific aspect of a program or to help design methods to measure project results. The Foundation uses this approach when the reputation of the grantee is respected and the grantee can provide expertise or resources not available within the Foundation, or when an objective, third-party evaluation is called for by the staff or foundation officers.

An example is a global awareness project conducted by the International Affairs Program in a local Ohio community. The Mershon Center at Ohio State University received a grant from the Foundation to conduct interim and follow-up surveys of opinions and attitude changes resulting from project activities. The University of Southern California and the Public Opinion Center of Dayton, Ohio, were also contracted to collect and analyze data. In addition to grants and contracts to institutions, this project contracted several individual, private consultants who assisted in analyzing and reporting results.

Occasionally, participants in a project reject the idea of an outside evaluator. This problem arose at one of the Dartmouth Conferences, a project of the International Affairs Program in which private citizens of the Soviet Union and United States discuss mutual concerns. Rejecting the idea of an evaluator proper, a rapporteur was appointed to analyze both the content of the discussions and the communication processes and dynamics.

Often, evaluation is the inadvertent by-product of a project. For instance, the review board of a professional,

refereed journal carefully scrutinizes--essentially evaluates--articles submitted by members of the Kettering Foundation. Consequently, the number of articles that members publish in such journals is a measure of the quality of the Foundation's work. Both the quantity and quality of response generated by readers are viewed as other indications of the merit of the Foundation's work.

An important mandate of the Kettering Foundation is to collaborate with other institutions to achieve mission goals. In the Foundation's 1978 Annual Report Robert Chollar explains the importance of working with other groups and institutions.

> "Clout" today is not the ability to go it alone, but rather to muster and support those who--working together --are able to get the job done; responsibility for the successful confrontation of critical issues must be broadly shared.[2]

The Foundation's success in obtaining support from other institutions in part measures the extent to which they value these program efforts. The Rockefeller, Mott, and National Science foundations are just a few organizations that have cooperated with the Kettering Foundation in joint projects. The Foundation periodically re-examines projects that fail to attract the interest of other institutions.

Different characteristics of a project's staff, the nature of collaboration, available funds, and the purposes for which evaluation is conducted influence the approach

selected to evaluate a project. Sometimes evaluation is done for the foundation management or board of trustees; other times, for the public, the staff, or, on occasions, for the research community. Most of the Foundation staff believe that these and other elements are valid considerations when attempting to make the method of evaluation conform to the needs of the project. Flexibility and adaptability are key concepts in the Kettering Foundation's approach to evaluation.

## INTERNAL EVALUATION: A DETAILED EXAMINATION OF THE EVALUATION OF ONE PROJECT

The Kettering Foundation's approach to internal evaluation follows from its attitudes toward and perception of the purpose of evaluation. An examination of a specific project of the Institute for Development of Educational Activities, Inc. (/I/D/E/A/) will reflect the thinking and processes of evaluation used.[3] This section of the paper describes the procedures and logic used in one of /I/D/E/A/'s development projects in school improvement.

A great deal of attention was given to new theories in education during the sixties and early seventies. Criticism of the existing education establishment was abundant. /I/D/E/A/ staff members were well aware of this situation when they began a staff development program--the /I/D/E/A/ Change Program for Individually Guided Education (IGE).

It was one thing to hypothesize utopian solutions or to be critical of the education establishment, however, and

quite another to design positive, realistic ways to affect improvement within the existing system. The program proposed to do the latter. Rather than take a negative approach, the staff found the positive elements in the existing system and worked from there.

Staff members based their program on several basic beliefs about schools: they assumed that most schools are intended to be educational institutions, that most teachers want to help students learn, that parents are interested in having their children learn, and that children will respond positively to learning programs geared to their real needs and interests.

Fundamental to these basic assumptions was the importance of the individual. For a program of positive change to succeed, it must involve many active participating individuals--not just students, but teachers, administrators, and parents as well. Furthermore, an effective system for communication among these involved individuals would be necessary.

These ideas--the importance of individuals and the need for communication among them--were not new. The challenge, as the /I/D/E/A/ staff saw it, was to include them creatively in a systematic, comprehensive program--a program which, because it proposed sound, well accepted processes of education, would enable schools to implement positive and continuous improvement while meeting the needs of individuals.

IGE is not a curriculum for students, but rather is a method for implementing change within elementary and secondary

schools. Therefore, staff members did not begin by deciding what children should learn; rather, they tried to determine the conditions under which learning occurs most successfully. The plan devised and used for developing IGE included six steps, each with an evaluation component:

1. specifying desired outcomes;
2. working at a limted number of development sites to refine strategies;
3. analyzing the training and strategies that foster constructive change;
4. developing methods and materials for training IGE teachers;
5. identifying intermediate agencies to work with the /I/D/E/A/ program; and
6. training persons from these agencies and maintaining a close relationship with them.

Examining these six steps will serve to demonstrate the processes used in developing the /I/D/E/A/ Change Program.

STEP 1 Formulating a list of process objectives was the first task undertaken in the project. The experience and intuitions of the Kettering Foundation's Education Program staff formed the basis for these objectives--or outcomes, as they became known (Appendix 4). In formulating outcomes, staff members made use of several research programs conducted earlier by other institutions in the field. Important to the project was the Harvard Teaching Teams Project (1959-1964) sponsored by the Ford Foundation. The study provided valuable

information and supplemented Kettering's five-year program of research in education change and school development, begun by John Goodlad in 1966 involving a league of eighteen elementary schools in California. Work done by the Wisconsin Research and Development Center for Cognitive Learning also contributed substantially to IGE development. Through an agreement in 1969, the staff combined the results of the Center's studies related to the multi-unit school concept with /I/D/E/A/'s research and development findings to prepare some early inservice materials for IGE.

A process of evaluation was already at work when the Kettering Education staff decided what to accept or reject in the Harvard and Wisconsin studies, and, although staff members began the project with over one hundred desired outcomes for IGE, this number was gradually reduced by the staff to thirty-five through a process of feedback, analysis, and refinement. These thirty-five outcomes describe conditions which were believed to be present in a vital, dynamic school capable of providing appropriate learning for students and continuous growth for school staffs.

In accordance with what was learned from these and other studies, the success of a program for change depended largely upon the commitment of individual staff members and their willingness to work together on the project. During the initial field work, the project staff learned that IGE could not be a system imposed upon a school without the knowledge and consent of its faculty. Moreover, they learned a

school needs the financial and moral support of the district if it is to succeed in bringing about positive change. Reflecting these findings and other processes identified from the research mentioned earlier, the thirty-five outcomes describe the ideal school as the /I/D/E/A/ staff envisions it. In other words, these outcomes are process goals which participating schools attempt to achieve. Implementation of the outcomes, then, becomes a yardstick by which the success of the /I/D/E/A/ Change Program is measured, and the level of implementation is also used as the independent variable in studies of the effects of IGE.

STEP 2 The aim of the second step of the project, to refine strategies by working at a limited number of development sites, was not to test the validity of IGE objectives, but rather to find ways to implement them. In 1968 the Education staff began a study called the Enhancing Differences Project. Over a period of three years, staff members worked in twenty elementary, middle and junior high schools in Ohio, Florida, New York, and Michigan, developing approaches to achieving IGE objectives. During this time the staff analyzed the effects of their efforts and tested the original program outcomes. Decisions about the outcomes rested on the combined input of staff members who were working directly with classroom teachers, principals, and other administrators on a day-to-day basis. The information was collected systematically through processes of observation, interview, and small group

discussions with participating students, teachers, and others. The project staff attempted to maximize their first-hand experience and knowledge about teachers' day-to-day use of IGE processes so that collective judgements would be based upon reliable information.

STEPS 3 and 4 During steps three and four of their development processes the staff relied heavily upon and had faith in the collective judgements of its members because of the context in which the staff worked and the processes that were systematically used.

The project staff were interviewed regarding the context and processes they felt contributed significantly to developing IGE. The description emphasized the following:

1. Members of the project staff have a high level of competence in their profession.
2. A clear sense of mission goals and directions exists and each staff member feels a strong sense of ownership toward the project.
3. There is an openness to diverse points of view--diversity is viewed as a strength rather than a problem.
4. A feeling of collegiality among staff exists based upon mutual trust and knowledge of each other's strengths.
5. Project members respect and use both objective and subjective data.
6. There is freedom to take risks.

7. The project staff is buffered from forces or influences that might distract them from acting according to their best thinking.

And the processes the project staff said they continuously try to use are:

1. mission goals to provide long term consistency to the group's efforts;
2. shared decision making to identify project goals, objectives, and activities;
3. decisions made only after exploring a variety of alternatives, clarifying, discussing the rationale, and considering the anticipated consequences of each option;
4. accountability, is shared by the collective staff for all aspects of the project;
5. activities of the project continuously critiqued and modified to reflect the group's best thinking; and
6. continuous analysis and improvement of group processes used by the staff.

During the Enhancing Differences Project, the education staff worked on developing and analyzing effective training strategies and materials that would bring about positive changes in schools. Both parts of the project greatly relied on using information systematically, a key element of the /I/D/E/A/ project being continuous analysis and assessment.

Many individuals, organizations, and institutions have analyzed various aspects of the IGE project, and the Education staff often has consulted these findings to refine the

training strategies for bringing about change. In addition to evaluation conducted internally, the Education staff has particpated in indepth studies of the /I/D/E/A/ program conducted by outside agencies such as Belden Associates[4], University of Nebraska[5], University of Missouri[6], The Center for New Schools[7], and The Center on Technology and Society[8]. Training materials and inservice activities have undergone continual revision as a result of these studies.

STEP 5 After achieving the defined outcomes within the Enhancing Differences Project schools and developing training materials and strategies for teachers, the /I/D/E/A/ staff was ready to disseminate the IGE program. Since over 88,000 public elementary and secondary schools are in the United States, /I/D/E/A/ chose to use a partnership strategy in making IGE available to schools. This was the fifth step of the IGE project development--identifying other institutions to help disseminate the program. Without the help of other institutions, referred to as intermediate agencies, widespread implementation of IGE would not have been possible.

During the 1974-75 school year, an analysis of /I/D/E/A/'s developing relationship with fifty intermediate agencies revealed that most became interested in IGE because an /I/D/E/A/ staff member or a representative from an existing intermediate agency had contacted a key person in the potential agency. Mass mailings and grass roots efforts by the schools did not have an appreciable effect on enlisting agencies.

However, follow-up letters and telephone calls, it was discovered, were important in developing relationships after initial contact. For more than half of the agencies, at least six months elapsed between initial contact and the establishment of an agreement between /I/D/E/A/ and the agency. An evaluation of recruiting methods helped staff members focus their attention on more effective approaches to identifying and training intermediate agencies and eliminating those approaches not producing results.

STEP 6 After the /I/D/E/A/ staff established a network of intermediate agencies, they began training persons from these agencies. /I/D/E/A/ staff members and carefully selected facilitators--persons trained to carry out the program in the schools--directed training in clinical workshops. The training program is divided into three segments. During the first segment, participants learn how to work in small groups and how to teach small-group techniques to others. They develop an understanding of the IGE methods for planning, organizing, and helping each other improve. In the second segment of training, participants plan instructional programs for students and work with them under typical school conditions. Approximately two weeks later, a follow-up session, the third segment of the training program, is conducted. In this session participants learn about their unique roles as facilitators and develop plans for implementing the IGE program in their schools. Fellow participants and /I/D/E/A/

staff members observe, analyze, and critique their colleagues' activities throughout the training program.

## IMPLEMENTATION IN SCHOOLS

Because IGE outcomes are based on concepts generally accepted as sound education, most schools have at least partially implemented some of them before beginning the /I/D/E/A/ Change Program.

A vital part of the IGE program development has been to monitor schools in IGE to assess their progress in improving the use of these fundamental processes of education. /I/D/E/A/ staff members have done this on a wide scale by using teacher self-assessment questionnaires. The field tested form of the instrument used since September 1973 was developed and tested for validity and reliability between 1970 and 1972.[9]

Each year teachers from IGE schools are asked to respond to the questionnaire by judging the degree to which each of the thirty-five outcomes has been implemented in their schools. The responses received during the first year served as a baseline against which a school's progress in implementing each of the IGE outcomes is measured.

The IGE outcomes are the intended results of the /I/D/E/A/ Change Program. Schools that participate in this program expect results of their participation to be growth in the areas described by these thirty-five statements. The amount of growth participating schools are able to achieve in these thirty-five different areas measures the success of IGE.

For purposes of analyzing implementation progress, the staff has organized the list of thirty-five outcomes into five major components of IGE:

I. IGE Schools help students plan and assess their learning.

II. IGE schools develop positive relationships between students, teachers, and parents.

III. IGE schools offer learning options for students.

IV. IGE schools continuously analyze and improve their operations.

V. IGE schools give affected parties a voice in decision making.

While even small increases in outcome achievement levels are desirable, schools realize noticeable benefits such as a more positive school climate only after the outcomes are substantially implemented. From the staff's experience and the recommendations of facilitators, an average outcome score of 60--based on a scale of 0-100--is probably necessary to produce measurable benefits to a school. Staff members encouraged schools implementing slowly to select two or three outcomes from each of the five components rather than work on several outcomes from only one component. Recent data indicate that slightly less than half the approximately 2,000 schools in the program have achieved an average outcomes score of 60 or above. Schools that have achieved scores above 60 show a definite tendency to realize benefits and have more positive attitudes toward IGE.

A general picture of IGE implementation is based upon the average level of implementation of five groups of schools starting the IGE program at different times since 1971. As time passed, all groups improved their scores, but schools beginning IGE in 1974 and 1975 attained mean scores of 50 or above within two years, while groups starting earlier took three or four years to reach a similar level.

The recent trend toward more rapid adoption of the outcomes may result from improved materials, training, and implementation strategies. A national survey[4] divided IGE schools into categories according to when they began implementation and the data revealed that more teachers from the recently implementing schools had special training for IGE, and more rated their training as "excellent" or "good."

In view of the research conducted by the /I/D/E/A/ staff, training continues to be a very high priority; 79 percent of the facilitators feel that providing inservice training for teachers, principals, and staff is of primary importance; an additional 12 percent feel it is desirable but not a high priority; while only 9 percent feel that training is not a high priority or not appropriate at present.[10]

Schools do not implement all outcomes at the same rate. Most concentrate on a few selected outcomes initially, postponing the others until they achieve noticeable progress with the first group. It is important to note which outcomes are most frequently well implemented early and which ones

tend to lag behind. Those outcomes which were most often implemented early have to do with school organization and district support for the concepts of IGE. Those with the lowest level of implementation during the first two years have to do with student responsibility and effective use of community resources and interaction among League schools.

No group of schools with the same start-up year has achieved implementation much above a score of 60; however, these data are composite scores. Individual school scores range from 30 to 84. Average scores tend to approach a plateau rather rapidly because the first outcomes selected are more easily implemented than others. The rate of change levels off as schools attempt more difficult outcomes. Breaking through the plateau depends on implementing those outcomes with baseline scores in the lower ranges.

Schools are encouraged to re-examine their priorities on a regular basis for balance between processes that affect students directly and processes that provide support for the teachers' attempts to individualize learning for the students.

IGE schools have changed significantly during their participation in the /I/D/E/A/ Change Program. The most dramatic changes documented involve the procedures used to make decisions and the methods used to effect change in individual schools. Significant growth has also taken place in the education management practices of IGE schools and in the relationships among students, teachers, and parents. In addition, participating schools have improved their processes

for gearing the learning environment to the individual student.

## FUTURE TRENDS IN EVALUATION

Evaluation at the Kettering Foundation takes many forms and each provides a perspective on the progress of individual programs, the Foundation has regularly sought the advice and criticism of independent consultants and peer professionals. The Foundation views evaluation as an integral part of each project and some degree of failure as an inevitable part of the learning process. Or, as Charles F. Kettering said, "the only time you don't want to fail is the last time you try." But Kettering staff have worked to create a climate in which, when progress does not meet expectations, something is learned and the experience is incorporated in planning new directions.

Based on the methods of evaluation found in the Foundation projects, some speculations may be made about the possible courses that future evaluation techniques will take at the Kettering Foundation. Clearly, those techniques that permit effective continuous project evaluation are preferred over post-project evaluation, and evaluation by the internal staff is used more than external evaluation for many aspects of our projects. There are some valid reasons for this reliance on the internal staff, for these staff members have a clear sense of mission goals and directions; each member also feels a strong sense of ownership toward the project.

As staff members with vested interests in a project become a team, other traits beneficial to evaluation begin

to appear. Members, for instance, begin to recognize and rely on the strengths of others in the group. As they begin to value others' levels of competence and intuitions, they begin to respect subjective as well as objective data used to direct and evaluate the project. Soon, staff members begin to feel free to take risks. They accept diverse points of view, regarding this diversity as a positive rather than a negative in determining the worth or merit of an idea, method, or product.

The processes used, as well as the nature of evaluation, have also changed. Now, instead of only evaluating a completed project, staff members continuously analyze, critique, and modify their projects, using their best collective thinking. In this way not only does the staff share accountability for all aspects of the project, but decisions--decisions which can be implemented during the course of and not after the completion of a project--can be made and used more effectively.

It is only natural that as foundations have grown to recognize their potentials for solving major problems facing humanity, they have adjusted their methods of evaluation accordingly. Ambitious, long-range projects, such as that of the Kettering Laboratory--to help humanity produce enough food to feed itself--require ongoing processes of evaluation. The Foundation cannot afford, either from a humanitarian or a financial standpoint, to find at the end of a ten-year project that it should have pursued a more effective course of action.

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# Science and Technology Appropriations

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Increasing World Food Supply** | | | | |
| **Enhancement of Plant Productivity** | | | | |
| To increase food plant yields and/or nutritional quality by extending and improving biological nitrogen fixation and by modifying plant regulatory and genetic characteristics | | $ 817,306 | $ 817,306 | |
| **Catalytic Nitrogen Fixation** | | | | |
| To explain nitrogenase catalysis and to produce synthetic systems with potential for fixing nitrogen using only renewable resources | | 355,162 | 355,162 | |
| To support the Second International Symposium on Nitrogen Fixation/Centro De Edafologia y Biologia Aplicada, Salamanca, Spain | $ 4,000 | | 4,000 | |
| To support the Third International Symposium on Nitrogen Fixation — a joint project with International Affairs Program/ University of Wisconsin | | 10,000 | 7,000 | $ 3,000 |
| **Relationship Between Climate and Food Production** | | | | |
| To study climate/yield models for Indian wheat and rice/ University of Missouri | 8,000 | | 8,000 | |
| To support a study of primary productivity and climate in crop modeling/The University of Michigan | 2,500 | | 2,500 | |
| To provide travel support for a crop yield modeling workshop/ Center for Climatic and Environmental Assessment | 2,000 | (713) | 1,287 | |
| To develop a prediction model relating spring wheat production, land, and climate/University of Wisconsin | 17,351 | | 10,000 | 7,351 |
| To study separating the effects of weather and management on crop yields/James D. McQuigg | 12,500 | (500) | 12,000 | |
| To calculate weather recurrence probabilities/University of Oklahoma | 5,000 | | 5,000 | |
| To prepare a book on the interrelationship of population, food, climate, land, and environment/ Dr. George M. Van Dyne | 8,372 | | | 8,372 |
| To conduct exploratory research on science and technology program development — a joint project with the foundation's Exploratory Research Program/ Dr. John H. Nelson | 4,103 | (2,056) | 2,047 | |
| To support development of crop yield probability analysis/ Peter R. Hayes | | 15,500 | 5,205 | 10,295 |
| **Other** | | | | |
| To support the symposium "From Cyclotrons to Cytochromes"/University of California, San Diego Foundation | | 5,000 | 1,000 | 4,000 |
| To research electric arc nitrate generator | | 91,595 | 91,595 | |
| Research engineering and instrument development | | 135,878 | 135,878 | |
| **Building and support services for the Research Laboratory** | | 452,129 | 452,129 | |
| **Program development, participation, and evaluation** | | 87,175 | 87,175 | |
| **Science management services** | | 112,270 | 112,270 | |
| | $63,826 | $2,078,746 | $2,109,554 | $33,018 |

# Education Appropriations

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Implementing the IIIDIEIAI Change Program for Individually Guided Education (IGE)—a comprehensive approach to school improvement** | | | | |
| To develop a national network of IGE agencies and schools/IDEA, Inc. | | $ 262,469 | $ 262,469 | |
| To conduct the Overseas School project/IDEA, Inc. | | 54,642 | 54,642 | |
| To provide mission support services/IDEA, Inc. | | 91,802 | 91,802 | |
| **Mission** | | | | |
| **Conducting the Study of Schooling in the United States—a national study of elementary and secondary schools** | | | | |
| To complete national data collection/IDEA, Inc. | | 407,310 | 407,310 | |
| To coordinate the study and begin analysis of data/IDEA, Inc. | | 259,715 | 259,715 | |
| To establish an advisory board and begin preparation of study reports/IDEA, Inc. | | 132,593 | 132,593 | |
| To analyze student life in schools/IDEA, Inc. | | 42,844 | 42,844 | |
| To provide mission support services/IDEA, Inc. | | 91,775 | 91,775 | |
| **Mission** | | | | |
| **Analyzing Educational Policy Issues** | | | | |
| To conduct the IIIDIEIAI Fellows Program/IDEA, Inc. | | 119,935 | 119,935 | |
| To continue work of the National Commission on Youth/ IDEA, Inc. | | 92,933 | 92,933 | |
| To conduct seminars and report on critical issues in education/IDEA, Inc. | | 6,406 | 6,406 | |
| To conduct the tenth annual survey of public attitudes toward the public schools/IDEA, Inc. | | 35,959 | 35,959 | |
| To provide mission support services/IDEA, Inc. | | 63,938 | 63,938 | |
| **Coordinating Special Studies in Education** | | | | |
| To support research on the ecology of human development/Cornell University | $10,000 | 22,000 | 21,000 | $11,000 |
| To support dissemination of recommendations on the arts in education/The American Council for The Arts in Education | 2,000 | | 2,000 | |
| To support a seminar and report on the cost of declining enrollments/American Association of School Administrators | | 5,200 | 3,900 | 1,300 |
| Special studies project development, participation, and evaluation/IDEA, Inc. | | 32,721 | 32,721 | |
| To distribute education materials to the public and profession/ IDEA, Inc. | | 89,445 | 89,445 | |
| **Program development, participation, and evaluation/ IDEA, Inc.** | | 84,736 | 84,736 | |
| | $12,000 | $1,896,423 | $1,896,123 | $12,300 |

# Urban Affairs Appropriations

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Strengthening Urban Communities** | | | | |
| **Policy Training** | | | | |
| To develop and test a prototype training program for local elected officials/University of Missouri at Kansas City | $ 13,795 | | $ 5,385 | $ 8,410 |
| To develop and apply training programs for local elected officials/ | | | | |
| National League of Cities | 100,000 | $111,471 | 195,471 | 16,000 |
| IDEA, Inc. | | 65,142 | 65,142 | |
| To assist the International City Management Association in forming a task force on European urban policy—a joint project with the foundation's International Affairs Program | | | | |
| Task Force II | 2,881 | | | 2,881 |
| Task Force III/International City Management Association | | 6,000 | 4,500 | 1,500 |
| **Revitalizing Neighborhoods** | | | | |
| To develop processes for acquiring and utilizing data for citizen involvement in dealing with disinvestment/ National Center for Urban Ethnic Affairs | 5,000 | | 5,000 | |
| To study alternative strategies for neighborhood development/ Dr. Stanley J. Hallett | 9,050 | | 6,787 | 2,263 |
| To survey neighborhood development projects/National Association of Neighborhoods | 6,500 | | 6,500 | |
| To study the effects of "back to the city" movement/ The Johns Hopkins University, Center for Metropolitan Planning and Research | | 11,010 | 2,750 | 8,260 |
| To study the potential of neighborhood job development/ T.R.U.S.T., Inc. | | 20,000 | | 20,000 |
| **Developing Effective Community Processes** | | | | |
| To examine the public sector role in managing for quality of working life | | 7,700 | | 7,700 |
| To prepare and disseminate publications | 12,291 | 3,785 | 16,076 | |
| To prepare a guidebook on effective citizen involvement procedures/National Municipal League | 16,500 | | 10,000 | 6,500 |
| To develop a video-tape process for inquiry into community-based citizen involvement programs | 5,374 | (5,374) | | |
| To develop inservice training strategies for urban schools/ IDEA, Inc. | | 94,995 | 94,995 | |

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Developing a Coordinated National Urban Policy** | | | | |
| **Framework for National Urban Policy** | | | | |
| To conduct the National Urban Policy Roundtable/Academy for Contemporary Problems | | | | |
| Roundtable IV | 19,935 | | 19,935 | |
| Roundtable V | 62,500 | 19,583 | 20,000 | 62,083 |
| Program development, participation, and evaluation/ IDEA, Inc. | | 57,634 | 57,634 | |
| **Policy Issues Research** | | | | |
| To assess the inadvertent impact of Federal programs on urban areas/Rand Corporation | 45,293 | | | 45,293 |
| To organize an advisory group for Rand's assessment of Federal programs' impact on urban areas/National League of Cities | 5,400 | | 2,700 | 2,700 |
| To support a planning workshop on urban management in a depopulation situation | 706 | (673) | 33 | |
| To study approaches to the future in urban planning/ University of California, Los Angeles | 7,500 | | 3,750 | 3,750 |
| To support a study group on urban school integration/ American Academy of Arts and Science | 5,000 | | 4,000 | 1,000 |
| To design a citizens information center for Ohio/Kent State University | 7,500 | 12,394 | 7,500 | 12,394 |
| To support a National Normative Study of Urban Residents/ Public Opinion Surveys, Inc. | 15,000 | 15,000 | 30,000 | |
| To prepare a report on the politics of growth management in the states/Dr. John M. DeGrove | 6,343 | | 1,001 | 5,342 |
| To report on the administrative decentralization experience of New York City/Woodrow Wilson International Center for Scholars | 1,375 | | 1,375 | |
| To analyze community effectiveness and citizen satisfaction/ Social Policy Research Group, Boston College | 8,897 | 2,280 | 2,280 | 8,897 |
| To support the publication of a series of issue papers on national urban policy/Academy for Contemporary Problems | 10,000 | (1,432) | 8,568 | |
| To prepare and disseminate publications | 13,379 | (4,200) | 9,179 | |
| To develop a series of Urban Affairs papers which address critical urban problems/Virginia Polytechnic Institute | | 9,800 | 2,450 | 7,350 |
| To develop processes to facilitate public-private sector cooperation in urban problem solving | | 48,700 | | 48,700 |
| To support a case study on process development for large conferences/Academy for Contemporary Problems | | 9,350 | 3,675 | 5,675 |
| Program development, participation, and evaluation/IDEA, Inc. | | 124,684 | 124,684 | |
| Project exploration | 150 | 1,425 | 75 | 1,500 |
| To provide management and support services/IDEA, Inc. | | 87,853 | 87,853 | |
| | $380,369 | $697,127 | $799,298 | $278,198 |

# International Affairs Appropriations

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Facilitating Nongovernmental Communication on Critical Issues** | | | | |
| **East-West Communication** | | | | |
| To support the Soviet-American Dartmouth Conference and task force meetings | $ 33,328 | $ 15,661 | $ 48,989 | |
| To cosponsor research and communication on technology policy and development in the People's Republic of China/ Stanford University | | | | |
| Phase I | 5,423 | 24,062 | 14,485 | $ 15,000 |
| Phase II | | 30,876 | | 30,876 |
| To support the U.S. visit of the first delegation from the Chinese People's Institute of Foreign Affairs/National Committee on U.S./China Relations | 2,000 | | 2,000 | |
| To cosponsor studies and seminars on economic modernization in the People's Republic of China/ China Council of the Asia Society | | 27,500 | 10,000 | 17,500 |
| **North-South Communication on Food and Development** | | | | |
| To carry out an experimental process for unofficial consultation between developing countries and multinational corporations/The Policy Sciences Center, Inc. | | 47,500 | 20,000 | 27,500 |
| To expand unofficial dialogues between leaders and specialists from the U.S. and developing countries regarding food and development/Overseas Development Council | | | | |
| Dialogues | 65,727 | | 65,727 | |
| Follow-up citizen education | 60,000 | | 41,000 | 19,000 |
| To develop training models for economic negotiators from developing countries/International Center for Law in Development | 34,554 | | 15,645 | 18,909 |
| To disseminate the results of the evaluation of foreign assistance to volunteer services in developing countries | | 34,742 | 34,742 | |
| To prepare and present a paper on climate variability, food production, and desertification/American Association for the Advancement of Science | 4,000 | | 4,000 | |
| To support the Third International Symposium on Nitrogen Fixation — a joint project with the foundation's Science and Technology Program/University of Wisconsin | | 5,000 | 5,000 | |
| **Communication with Hemispheric Neighbors** | | | | |
| To support the Lester B. Pearson Conference on the Canada-U.S. Relationship/ Council on Foreign Relations | 16,130 | (5,500) | 10,630 | |
| To cosponsor research and conferences on inter-American relations/The Woodrow Wilson International Center for Scholars | 10,552 | 17,750 | 23,705 | 4,597 |

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Strengthening Citizen Education and Involvement in International Relations** | | | | |
| **International Education in Public Schools** | | | | |
| To apply IGE concepts to global education — a joint project with the foundation's Education Program | | | | |
| Phase I | 17,316 | (13,725) | 3,591 | |
| Phase II | | 72,295 | 72,295 | |
| **Community Education on Critical World Issues** | | | | |
| To plan a pilot YMCA project on the international relations of communities/Mershon Center, Ohio State University | 15,500 | (1,661) | 13,839 | |
| To plan research on structures for citizen-government interaction/Mershon Center, Ohio State University | 11,515 | (5,704) | 5,811 | |
| To evaluate selected outcomes of "Columbus-in-the-World"/Mershon Center, Ohio State University | | 18,435 | | 18,435 |
| To initiate an inter-American community education and technical assistance program/Overseas Education Fund of the League of Women Voters | 8,841 | 15,159 | 22,500 | 1,500 |
| To conduct controlled research on increasing community international awareness | 18,287 | (2,014) | 16,273 | |
| **Regional and National Leadership Education on Critical World Issues** | | | | |
| To review, publish, and disseminate a study on attitudes of U.S. allies toward the U.N./The Atlantic Council of the U.S. | 4,500 | (381) | 4,119 | |
| To develop focus groups for surveying public opinion on foreign policy/League of Women Voters Education Fund | 13,560 | | 13,560 | |
| To combine surveys and focus group techniques in analyzing public opinion on foreign policy issues/League of Women Voters Education Fund | | 28,000 | | 28,000 |
| To conduct and report on public opinion surveys for foreign policy "town meetings" with U.S. State Department representatives | 6,335 | 27,600 | 25,400 | 8,535 |
| To participate in the National Council on Philanthropy study of international roles for foundations/ National Council on Philanthropy | 2,000 | 5,000 | 2,000 | 5,000 |
| To initiate cooperative leadership training for community international education | 31,501 | | 13,972 | 17,529 |
| To assist the International City Management Association in forming a task force on European urban policy — a joint project with the foundation's Urban Affairs Program | | | | |
| Task Force II | 2,895 | | 697 | 2,198 |
| Task Force III/International City Management Association | | 6,000 | 4,500 | 1,500 |
| To cosponsor the first national conference of state directors of the Friendship Force/ The Friendship Force, Inc. | 12,500 | (4,762) | 7,738 | |
| To participate in a study of world food production/Chicago Council on Foreign Relations | | 17,000 | 6,000 | 11,000 |
| Project exploration | 1,000 | 14,706 | 10,856 | 4,850 |
| **Program development, participation, and evaluation** | | 190,383 | 190,383 | |
| | $377,464 | $563,922 | $709,457 | $231,929 |

# Exploratory Research Appropriations

| | Unpaid Commitments August 31, 1977 | Appropriated (Canceled) During Year | Payments During Year | Unpaid Commitments August 31, 1978 |
|---|---|---|---|---|
| **Mission** | | | | |
| **Exploring Process and Issue Research** | | | | |
| To analyze economic, political, and social impacts of doubling yield in soybeans/Schnittker Associates | $ 46,929 | | $ 11,645 | $ 35,284 |
| To research the advantages of small-scale community activities/Institute on Man and Science | 6,374 | | 6,374 | |
| To define selected worldwide trends/Worldwatch Institute | 10,000 | | 10,000 | |
| To experiment with techniques of computer-based conferencing within Kettering Foundation Missions | 9,900 | | 1,541 | 8,359 |
| To continue investigation of teleconferencing within Kettering Foundation Missions | 32,268 | $ 5,690 | 6,954 | 31,004 |
| To develop teleconferencing simulation and training programs/ The Institute for the Future | 15,000 | | 15,000 | |
| To study and interrelate transformational change theories/ University of Dayton | 8,000 | (3,635) | 4,365 | |
| To explore long-term implications of teleconferencing/The Institute for the Future | 2,265 | (2,265) | | |
| To study the impact of open social systems/University of Iowa | 3,463 | 870 | 4,333 | |
| To conduct research on comparative environmental beliefs/ Research Foundation of New York University | 3,000 | | 3,000 | |
| To support review and dissemination of reports on open social systems in education | | 18,000 | 15,223 | 2,777 |
| To support an investment management seminar on alternative investments for endowed institutions | | 41,000 | 4,791 | 36,209 |
| To analyze and communicate results of Kettering Foundation survey research programs | 19,899 | (19,899) | | |
| To explore the development of a business leaders seminar network | 37,188 | | | 37,188 |
| **Mission** | | | | |
| **Identifying Targets of Opportunity** | | | | |
| To appraise the national communications policy-making process/Aspen Institute for Humanistic Studies | 40,000 | (10,000) | 15,000 | 15,000 |
| To support research on foundations/The Foundation Center | 10,000 | | 10,000 | |
| To conduct exploratory research on science and technology program development — a joint project with the foundation's Science and Technology Program/ Dr. John H. Nelson | 4,103 | (2,056) | 2,047 | |
| To support a visit of the higher education delegation from China/National Committee on U.S./China Relations | | 15,000 | 15,000 | |
| To prepare commemorative materials on the creativity of Charles F. Kettering | | 60,000 | 6,592 | 53,408 |
| Program Planning | 3,670 | | 3,670 | |
| **Program development, participation, and evaluation** | | 108,868 | 108,868 | |
| | $252,059 | $211,573 | $244,403 | $219,229 |

## APPENDIX 2

## CHARLES F. KETTERING FOUNDATION

### TRUSTEES

Robert G. Chollar
Chairman of the Board and President
Charles F. Kettering Foundation

Harrison S. Brown
Director, Resource Systems Institute
The East-West Center

Nathaniel S. Colley
Attorney

Norman Cousins
Chairman of the Editorial Board
Saturday Review

John Sloan Dickey
President Emeritus
Dartmouth College

Robert A. Kerr
Chairman of the Board
and Chief Executive Officer
Winters National Bank & Trust Co.

Richard D. Lombard
Investment Management

Madeline H. McWhinney
President
Dale, Elliott & Company, Inc.

Howard K. Nason
President
IRI Research Corporation

David V. Ragone
Dean, College of Engineering
University of Michigan

Charles F. Kettering Foundation--Continued

OFFICERS AND PROGRAM DIRECTORS

Robert G. Chollar
Chairman of the Board and President

John M. Bahner
Director, Education

Winston O. Franklin
Vice President

James E. Kunde
Director, Urban Affairs

Robert F. Lehman
Secretary, General Counsel
and Director, Exploratory Research

Raymond J. Miller
Vice President for Administration
and Treasurer

Phillips B. Roupp
Vice President for the Social Sciences
and Director, International Affairs

Samuel G. Sava
Vice President

James P. Schwartzhoff
Controller and Assistant Treasurer

Edwin H. Vause
Vice President for Science and Technology

Charles L. Willis
Senior Planning Officer

COUNSEL

Joseph S. Iseman
Paul, Weiss, Rifkind, Wharton & Garrison

APPENDIX 3

## Current Members of the Science Advisory Committee

Dr. Harry Beevers
Professor of Biology
University of California
Santa Cruz

Dr. Olle Bjorkman
Department of Plant Biology
Carnegie Institute of Washington

Dr. Robert Burris
Professor of Biochemistry
University of Wisconsin-Madison

Dr. James P. Collman
Professor of Chemistry
Stanford University

Dr. Martin Kamen
Professor Chemistry
University of Southern California

Dr. Joseph E. Varner
Professor of Biology
Washington University

## Past Members of the Science Advisory Committee

Dr. Paul D. Boyer
Director, Molecular Biology Institute
University of California

Dr. Harry B. Gray
Professor of Inorganic Chemistry
California Institute of Technology

Dr. Perry R. Stout
Professor of Soil Sciences
University of California

Dr. Jui H. Wang
Einstein Professor
State University of New York

Dr. H. B. Woodruff
Executive Director for Biological Sciences
Merck Institute for Therapeutic Research

APPENDIX 4

|I|D|E|A| CHANGE PROGRAM FOR
INDIVIDUALLY GUIDED EDUCATION
AGES 5 19

# IGE OUTCOMES

1. All staff members have had an opportunity to examine their own goals and the IGE outcomes before a decision is made to participate in the program.

2. The school district has approved the school staff's decision to implement the /I/D/E/A/ Change Program for Individually Guided Education.

3. The entire school is organized into Learning Communities with each Learning Community composed of students, teachers, aides, and a Learning Community leader.

4. Each Learning Community contains a cross section of staff.

5. Learning Community members have an effective working relationship as evidenced by responding to one another's needs, trusting one another's motives and abilities, and using techniques of open communication.

6a. Each Learning Community is composed of approximately equal numbers of two or more student age groups. (Ages 5-12) or
6b. Each Learning Community is composed of approximately equal numbers of all student age groups in the school. (Ages 10-19)

7. Each student has an advisor whom he views as a warm, supportive person concerned with enhancing the student's self-concept; the advisor shares accountability with the student for the student's learning program.

8. Personalized in-service programs are developed and implemented by each Learning Community staff as a whole as well as by individual teachers.

9. The Learning Community maintains open communication with parents and the community at large.

10. Sufficient time is provided for Learning Community staff members to meet.

11. Learning Community members select broad educational goals to be emphasized by the Learning Community.

12. Role specialization and a division of labor amoung teachers are characteristics of the Learning Community activities of planning, implementing, and assessing.

13. Each student's learning program is based on specified learning objectives.

14. A varfety of learning activties using different media and modes is used when building learning programs.

15. Both student and teacher consider the following when a student's learning activties are selected:
    - Peer relationships
    - Achievement
    - Learning styles
    - Interest in subject area
    - Self-concept.

16. Students pursue their learning programs within their own Learning Communities except on those occasions when their unique learning needs can only be met in another setting using special human or physical resources.

17. Learning Community members make decisions regarding the arrangements of time, facilities, materials, staff, and students within the Learning Community.

18. The staff and students use special resources from the local community in learning programs.

19. A variety of data sources is used when learning is assessed by teachers and students, with students becoming increasingly more responsible for self-assessment.

20. Each student (individually, with other students, with staff members, and with his parents) plans and evaluates his own progress toward educational goals.

21. Teachers and students have a systematic method of gathering and using information about each student which affects his learning.

22. The Program Improvement Council formulates school-wide policies and operational procedures and resolves problems referred to it involving two or more Learning Communities.

23. The Program Improvement Council coordinates school-wide in-service programs for the total staff.

24. The school is a member of a League of schools implementing IGE processes and participating in an interchange of personnel to identify and alleviate problems within League schools.

25. The school as a member of a League of IGE schools stimulates an interchange of solutions to existing educational problems and serves as a source of ideas for new development.

26. The Learning Community analyzes and improves its operations as a functioning group.

27. Learning program plans for the Learning Community and for individual students are constructively critiqued by members of the Learning Community.

28. The Program Improvement Council analyzes and improves its operations as a functioning group.

29. Each student can state learning objectives for the learning activities in which he is engaged.

30. Each student accepts increasing responsibility for selecting his learning objectives.

31. Each student accepts increasing responsibility for selecting or developing activities for specific learning objectives.

32. Each student demonstrates increasing responsibility for pursuing his learning program.

33. The Program Improvement Council assures continuity of educational goals and learning objectives throughout the school and assures that they are consistent with the broad goals of the school system.

34. Students are involved in decision making regarding school-wide activities and policies.

35. Teacher performance in the learning environment is observed and constructively critiqued by members of the Learning Community using both formal and informal methods.

/I/D/E/A/
5/16/75